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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

029116.53329US

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Signature _____

Typed or printed name _____

Application Number

10/796,278

Filed

March 10, 2004

First Named Inventor

Sadao MORI

Art Unit

1725

Examiner

Samuel M. Heinrich

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

- ☐ applicant/inventor.
☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☐ attorney or agent of record.
Registration number _____

☒ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 40,625


Signature

Robert L. Grabarek, Jr.

Typed or printed name

949-263-8400

Telephone number

10/23/2007

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 10/796,278
Applicants : Sadao MORI, et al.
Filed : March 10, 2004
TC/A.U. : 1725
Examiner : Heinrich, Samuel M.
Docket No. : 029116.53329US
Customer No. : 23911

Confirmation No. 9383

Pre-Appeal Brief Request for Review

Sir:

This Brief is provided in response to the Final Office Action mailed April 23, 2007. Concurrent with this Brief, Applicants have also filed a Notice of Appeal and a three-month extension of time.

Statement of Clear Legal and Factual Deficiencies in the Examiner's Rejections

Applicants respectfully submit that even if the Examiner's argued combination of the Applicants' Admitted Prior Art (AAPA) and Takemori can be made, the combined references still do not disclose all of the claimed features of Applicants' invention as particularly claimed in claim 1 where Applicants' **particularly claimed structure** for a laser machining apparatus aligns **three or more laser beam splits in a same direction so that the beam splits are incident on a machining lens.**

Examiner's Rejection in Final Office Action of April 23, 2007

In the Office Action, the Examiner has rejected independent claim 1 as being unpatentable over the AAPA in view of Takemori. As will be further discussed below, in the Office Action, Applicants respectfully submit that the Examiner has not even addressed where the above-claimed features of Applicants' invention can be found in the combined references. Applicants respectfully submit that the Examiner only argues that it would have been obvious to include the structure of Takemori in the AAPA to solve a problem in

the AAPA discussed by Applicants in Applicants' specification that machining beams are incident on the surface of the printed circuit at an angle so that the axes of the machined holes are inclined. The Examiner argues that it would have been obvious to combine Takemori with the AAPA to "reduce shift and inclination of the beam delivery."

However, Applicants respectfully submit that even if Takemori can be combined with the AAPA to solve this problem in the prior art, Applicants also respectfully submit that an additional problem in the prior art was discussed by Applicants in the specification. Applicants respectfully submit that this additional problem is that there is no reference in the AAPA to making *three or more beams incident on one machining lens* so as to further improve the machining speed while reducing the price of the apparatus. Applicants respectfully submit that claim 1 claims a laser machining apparatus that makes *three or more beams incident on one machining lens*. Applicants also respectfully submit that the Examiner has provided no argument in the Office Action for how the combined references disclose this additionally claimed feature of Applicants' invention and that, even if Takemori can be included in the AAPA, the combined references do not disclose this feature of Applicants' invention. Takemori provides no disclosure for Applicants' claimed laser machining apparatus that makes *three or more beams incident on one machining lens*. Therefore, Applicants respectfully submit that the Examiner's rejection in the Office Action is legally and factually deficient since all of Applicants' claimed features of independent claim 1 are not disclosed in the Examiner's argued combination of the AAPA and Takemori.

Detailed Discussion of Office Action's and Advisory Action's Legal and Factual Deficiencies

In Applicants' laser machining apparatus as claimed in claim 1, with the *total reflection/transmission type beam combining means*, the optical paths of two of the beam splits incoming from two directions almost perpendicular to each other are aligned in essentially the same direction by the

total reflection/transmission type beam combining means. As further claimed in claim 1, the optical paths of the two aligned beam splits coming from the total reflection/transmission type beam combining means are aligned in a same direction with a third beam split by the **polarizing type beam combining means**. Thus, Applicants' claimed structure of the total reflection/transmission type beam combining means and the polarizing type beam combining means solves the additional problem in the AAPA of making three or more beam splits incident on one machining lens.

In Takemori, the method and apparatus is directed only to making two side walls for a tracking groove in a magneto-optical disk. Polarizing prism 22 merely synthesizes light beams 5a, 5b. Light beams 5a and 5b are used to form the groove. Light beam 5a forms one side of the groove and light beam 5b forms the other side of the groove. If both sides are to be formed with a wobble (See Fig. 2(a), two-sided wobble groove 1), both of light beams 5a and 5b are oscillated. If only one of the sides are to be formed with a wobble (See Fig. 3(a), one-sided wobble groove 2), only one of the light beams is oscillated. Even in the embodiment of Figure 9, which the Examiner has also referenced in the Office Action, the apparatus and method still only makes two side walls for the tracking groove. Whereas Figure 9 discloses three light beams 5a, 5b, and 73, this embodiment still only uses **two of the three beams** for forming the grooves. If a two-sided wobble groove is desired, light beams 5a and 5b are used and "the light beam 73 is blocked." If a one-sided wobble groove is desired, light beams 5b and 73 are used and "the light beam 5a is blocked." Col. 10, lines 59-67 and Col. 11, lines 9-18. (emphasis added). The embodiment of Figure 9 merely utilizes only one deflector 51 as contrasted with the multiple deflectors used in the other embodiments. Therefore, even in an embodiment of Takemori where three light beams are disclosed, there is no disclosure in Takemori for aligning two beam splits coming from a total reflection/transmission type beam combining means in a same direction with a third beam split by a polarizing type beam combining means, as claimed by Applicants in claim 1. In Takemori, the structure only

provides two light beams incident on the disk at any one time because only two light beams are required for forming the two sides of the groove. Further, Applicants respectfully submit that by using the beam splitter 22 of Figure 9 of Takemori, it is impossible to combine three beams coming through lens 19a, 19b, and 19c. By means of using splitter 22, the beam through 19c is reflected to the direction of 19b, but is not combined.

Further, Applicants respectfully submit that Applicants' claimed structural configuration is not disclosed by Takemori. In Applicants' claimed invention, Applicants claim a ***total reflection/transmission type beam combining means*** where the optical paths of two of the beam splits incoming from two directions almost perpendicular to each other are aligned in essentially the same direction by the total reflection/transmission type beam combining means. Then, as further claimed in claim 1, the optical paths of the two aligned beam splits coming from the total reflection/transmission type beam combining means are aligned in a same direction with a third beam split by the ***polarizing type beam combining means***. See Applicants' Amendment filed January 9, 2006, at page 7, lines 12-27, for a synopsis of Applicants' claimed structure. Applicants respectfully submit that Takemori provides no disclosure for ***both*** of these ***claimed structures***. Further yet, Applicants respectfully submit that the Examiner has provided no argument for where Takemori discloses ***both*** of these claimed structures. At most, the Examiner only particularly refers to structure 22 in Figure 9 of Takemori. However, Applicants respectfully submit that polarizing prism or polarizing beam splitter 22 of Takemori is not a total reflection/transmission type beam combining means and also cannot disclose ***both*** of Applicants' claimed structures, as discussed above. Therefore, Applicants respectfully submit that the Examiner's rejection in the Office Action is legally and factually deficient for at least this additional reason.

Applicants also respectfully submit that it is not clear what the Examiner is arguing in the Advisory Action with respect to the opening and closing of shutters in Takemori. The Examiner argues that the capability of opening one of

two shutters or for opening/closing both shutters is a process limitation which does not impart patentability to apparatus claims. Applicants respectfully submit that they have not claimed opening/closing shutters. Applicants claim specific structures for a laser machining apparatus that align three beam splits. There are no process limitations of opening/closing shutters that are claimed. Even if the Examiner is attempting to argue that the claimed three beam splits are a functional limitation, Applicants respectfully submit that a “functional limitation must be evaluated and considered, just like any other limitation of the claim...” M.P.E.P. ¶ 2173.05(g).

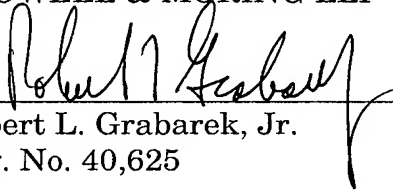
Further with respect to the Examiner’s arguments in the Advisory Action, Applicants respectfully submit that Takemori’s shutters cannot disclose Applicants’ particularly-claimed structure of the total reflection/transmission type beam combining means and polarizing type beam combining means as claimed by Applicants in claim 1, if this may be what the Examiner is attempting to argue. Further yet, Applicants respectfully submit that Takemori cannot disclose opening and closing of shutters in any combination to result in three beam splits being combined as claimed by Applicants because, as discussed above, Takemori has no reason to combine three beam splits. Takemori merely only provides two light beams incident on the disk at any one time because only two light beams are required for forming the two sides of the groove.

Therefore, Applicants respectfully submit that the Examiner’s rejections in the Office Action, and also the arguments in the Advisory Action, are legally and factually deficient since the combined references do not disclose all of the claimed features of Applicants’ invention as particularly claimed in claim 1.

Respectfully submitted,

CROWELL & MORING LLP

Dated: October 22, 2007

By 
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